National Institute on Alcohol Abuse and Alcoholism

Underage Drinking

Underage drinking is a serious public health problem in the United States. Alcohol is the most widely used substance among America's youth, and drinking by young people poses enormous health and safety risks.

The consequences of underage drinking can affect everyone—regardless of age or drinking status.

Either directly or indirectly, we all feel the effects of the aggressive behavior, property damage, injuries, violence, and deaths that can result from underage drinking. This is not simply a problem for some families—it is a nationwide concern.

Underage Drinking Statistics

Many young people drink alcohol

- In 2019, about 24.6 percent of 14- to 15-year-olds reported having at least 1 drink.[1]
- In 2019, 7.0 million young people ages 12 to 20 reported that they drank alcohol beyond "just a few sips" in the past month.[2]

Young people often binge drink

People ages 12 to 20 drink 4.0 percent of all alcohol consumed in the United States.[3] Although youth drink less often than adults do, when they do drink, they drink more. More than 90 percent of all alcoholic drinks consumed by young people are consumed through binge drinking[4] (see "What is binge drinking?" box).

- In 2019, 4.2 million young people reported binge drinking at least once in the past month.[2]
- In 2019, 825,000 young people reported binge drinking on 5 or more days over the past month.[2]

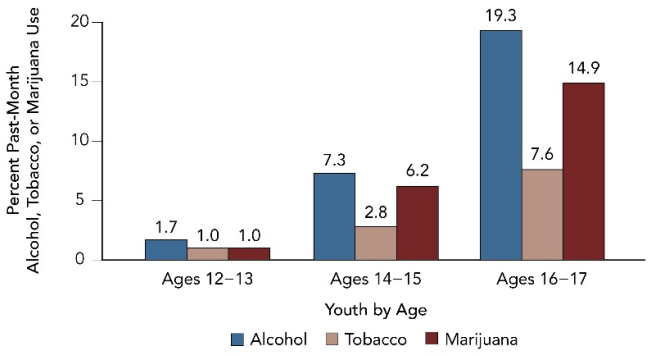
How much is a drink?

In the United States, a standard drink is defined as any beverage containing 0.6 fluid ounces or 14 grams of pure alcohol (also known as an alcoholic drink-equivalent), which is found in:

- 12 ounces of beer with about 5 percent alcohol content
- 5 ounces of wine with about 12 percent alcohol content
- 1.5 ounces of distilled spirits with about 40 percent alcohol content

The percentage of pure alcohol, expressed here as alcohol by volume (alc/vol), varies within and across beverage types. Although the standard drink amounts are helpful for following health guidelines, they may not reflect customary serving sizes. A large cup of beer, an overpoured glass of wine, or a single mixed drink could contain much more alcohol than a standard drink.

More adolescents use alcohol than tobacco or marijuana

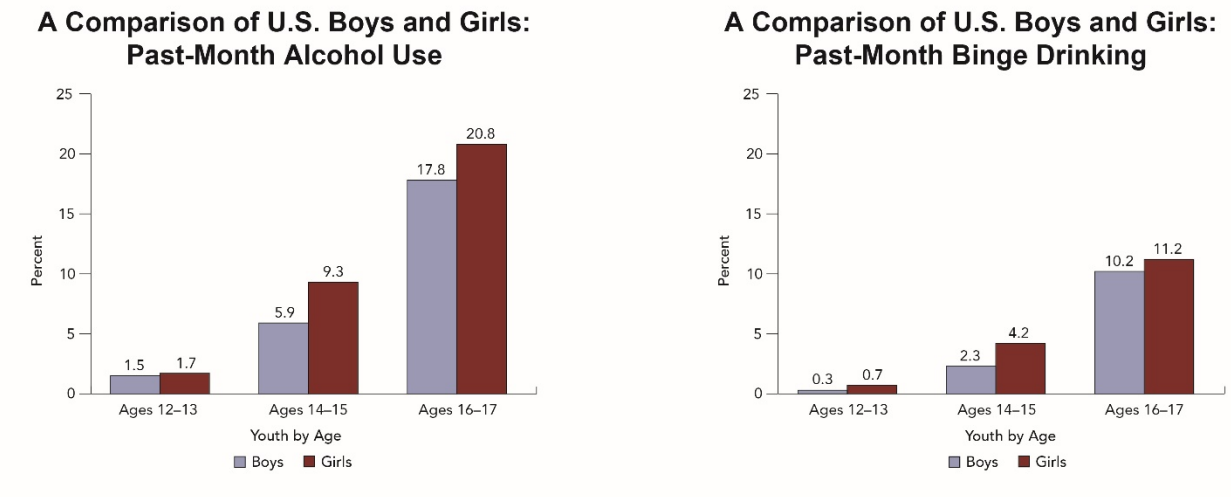


SOURCE: *2019 National Survey on Drug Use and Health.* Tables 2.6B, 2.2B, and 1.7B. Accessed 10/15/20.

Drinking patterns vary by age and gender

Alcohol use often begins during adolescence and becomes more likely as adolescents age. In 2019, almost 2 out of 100 adolescents ages 12 to 13 reported drinking alcohol in the past month and fewer than 1 in 100 engaged in binge drinking. Among respondents ages 16 to 17, fewer than 1 in 5 reported drinking and about 1 in 10 reported binge drinking.[5] It is important to implement prevention strategies during early adolescence to prevent this escalation.

Historically, adolescent boys were more likely to drink and binge drink than girls. Now, that relationship has reversed. Alcohol use has declined more in recent years among adolescent boys than it has in girls. As a result, more adolescent girls report alcohol use and binge drinking than boys.[6,7]



SOURCE: Population prevalence estimates (%) are weighted by the person-level analysis weight and derived from the Center for Behavioral Health Statistics and Quality. *2019 National Survey on Drug Use and Health Public Use File Codebook.* Rockville, MD: Substance Abuse and Mental Health Services Administration, 2020.

NOTE: In NSDUH, binge alcohol use is defined as drinking 5 or more drinks on the same occasion for males or 4 or more drinks on the same occasion for females on at least 1 day in the past 30 days. Any alcohol is defined as a drink of an alcoholic beverage (a can or bottle of beer, a glass of wine or a wine cooler, a shot of distilled spirits, or a mixed drink with distilled spirits in it), not counting a sip or two from a drink.

Underage Drinking Is Dangerous

Underage drinking poses a range of risks and negative consequences. It is dangerous because it:

Causes many deaths

Alcohol is a significant factor in the deaths of people younger than age 21 in the United States each year. This includes deaths from motor vehicle crashes, homicides, alcohol overdoses, falls, burns, drowning, and suicides.

Causes many injuries

Drinking alcohol can cause youth to have accidents and get hurt. In 2011 alone, about 188,000 people younger than age 21 visited an emergency room for alcohol-related injuries.[8]

What is binge drinking?

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as a pattern of drinking that brings blood alcohol concentration (BAC) to 0.08 percent—or 0.08 grams of alcohol per deciliter—or higher.* For a typical adult, this pattern corresponds to consuming 4 or more drinks (female), or 5 or more drinks (male), in about 2 hours.[17] Research shows that fewer drinks in the same timeframe result in the same BAC in youth; only 3 drinks for girls, and 3 to 5 drinks for boys, depending on their age and size.[18]

*A BAC of 0.08 percent corresponds to 0.08 grams per deciliter, or 0.08 grams per 100 milliliters.

Impairs judgment

Drinking can lead to poor decisions about taking risks, including unsafe sexual behavior, drinking and driving, and aggressive or violent behavior.

Increases the risk of physical and sexual assault

Underage binge drinking is associated with an increased likelihood of being the victim or perpetrator of interpersonal violence.[9]

Can lead to other problems

Drinking may cause youth to have trouble in school or with the law. Drinking alcohol also is associated with the use of other substances.

Increases the risk of alcohol problems later in life

Research shows that people who start drinking before the age of 15 are at a higher risk for developing alcohol use disorder later in life. For example, adults ages 26 and older who began drinking before age 15 are 5.6 times more likely to report having alcohol use disorder in the past year as those who waited until age 21 or later to begin drinking.[10]

Interferes with brain development

Research shows that young people's brains keep developing well into their 20s. Alcohol can alter this development, potentially affecting both brain structure and function. This may cause cognitive or learning problems and/or increase vulnerability for alcohol use disorder, especially when people start drinking at a young age and drink heavily.[11,12]

Why Do So Many Young People Drink?

As children mature, it is natural for them to assert their independence, seek new challenges, and engage in risky behavior. Underage drinking is one such behavior that attracts many adolescents. They may want to try alcohol but often do not fully recognize its effects on their health and behavior. Other reasons young people drink alcohol include:

- Peer pressure
- Increased independence, or the desire for it
- Stress

In addition, many youth have easy access to alcohol. In 2019, among 12- to 14-year-olds who reported that they drank alcohol in the past month, 96.5 percent reported that they got it for free the last time they drank.[13] In many cases, adolescents have access to alcohol through family members or find it at home.

Preventing Underage Drinking

Preventing underage drinking is a complex challenge. Any successful approach must consider many factors, including:

- Genetics
- Personality
- Rate of maturation and development
- Level of risk
- Social factors
- Environmental factors

Several key approaches have been found to be successful. They are:

Individual-level interventions

This approach seeks to change the way young people think about alcohol, so they are better able to resist pressures to drink.

School-based interventions

These are programs that provide students with the knowledge, skills, motivation, and opportunities they need to remain alcohol-free.

Family-based interventions

These are efforts to empower parents to set and enforce clear rules against drinking, as well as improve communication between children and parents about alcohol.

Community-based interventions

Community-based interventions are often coordinated by local coalitions working to mitigate risk factors for alcohol misuse.

Policy-level interventions

This approach makes alcohol harder to get—for example, by raising the price of alcohol and keeping the minimum legal drinking age at 21. Enacting zero-tolerance laws that outlaw driving after any amount of drinking for people younger than 21 also can help prevent problems.

The Role Parents Play

Parents and teachers can play a big role in shaping young people's attitudes toward drinking. Parents in particular can have either a positive or negative influence.

Parents can help their children avoid alcohol problems by:

- Talking about the dangers of drinking
- Drinking responsibly, if they choose to drink
- Serving as positive role models in general
- Not making alcohol available

- Getting to know their children's friends
- Having regular conversations about life in general
- Connecting with other parents about sending clear messages about the importance of youth not drinking alcohol
- Supervising all parties to make sure there is no alcohol
- Encouraging kids to participate in healthy and fun activities that do not involve alcohol

Research shows that children of actively involved parents are less likely to drink alcohol.[14]

On the other hand, research shows that a child with a parent who binge drinks is much more likely to binge drink than a child whose parents do not binge drink.[15]

Warning Signs of Underage Drinking

Adolescence is a time of change and growth, including behavior changes. These changes usually are a normal part of growing up but sometimes can point to an alcohol problem. Parents, families, and teachers should pay close attention to the following warning signs that may indicate underage drinking:[16]

- Changes in mood, including anger and irritability
- Academic and/or behavioral problems in school
- Rebelliousness
- Changing groups of friends
- Low energy level
- Less interest in activities and/or care in appearance
- Finding alcohol among a young person's things
- Smelling alcohol on a young person's breath
- Problems concentrating and/or remembering
- Slurred speech
- Coordination problems

Treating Underage Drinking Problems

Screening young people for alcohol use and alcohol use disorder is very important and may avoid problems down the road. Screening by a health practitioner (e.g., pediatrician) provides an opportunity to identify problems early and address them before they escalate. It also allows young people to ask questions of a knowledgeable adult. NIAAA and the American Academy of Pediatrics both recommend that all youth be regularly screened for alcohol use.

Some young people can experience serious problems as a result of drinking, including alcohol use disorder, which require intervention by trained professionals. Professional treatment options include:

- Attending individual or group counseling sessions one or more times per week
- Receiving a prescription from a primary care doctor or psychiatrist to help reduce alcohol cravings
- Participating in family therapy to build a supportive foundation for recovery

For more information, please visit: https://www.niaaa.nih.gov

1. Substance Abuse and Mental Health Services Administration (SAMHSA). 2019 National Survey on Drug Use and Health. Table 2.6B— Alcohol Use in Lifetime, Past Year, and Past Month among Persons Aged 12 or Older, by Detailed Age Category: Percentages, 2002-2019. https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs2019/NSDUHDetTabsSect2pe2019.htm#tab2-6b. Accessed October 7, 2020.

2. Substance Abuse and Mental Health Services Administration (SAMHSA). 2019 National Survey on Drug Use and Health. Table 7.16A— Alcohol Use in Lifetime, Past Year, and Past Month among Persons Aged 12 to 20, by Gender: Numbers in Thousands, 2002-2019. https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs2019/NSDUHDetTabsSect7pe2019.htm#tab7-16a. Accessed September 15, 2020.

3. Calculated using past 30-day quantity and frequency of alcohol use from the 2019 NSDUH public-use data file. SAMHSA, Center for Behavioral Health Statistics and Quality. National Survey on Drug Use and Health 2019 (NSDUH-2019-DS0001) Public-Use File Dataset. https://www.datafiles.samhsa.gov/study-dataset/national-survey-drug-use-and-health-2019-nsduh-2019-ds0001-nid19016. Accessed January 4, 2021.

4. Calculated using past 30-day quantity and frequency of alcohol use and past 30-day frequency of binge drinking (4+ drinks for females and 5+ drinks for males on the same occasion) from the 2019 NSDUH public-use data file. SAMHSA, Center for Behavioral Health Statistics and Quality. National Survey on Drug Use and Health 2019 (NSDUH-2019-DS0001) Public-Use File Dataset. https://www.datafiles.samhsa.gov/study-dataset/national-survey-drug-use-and-health-2019-nsduh-2019-ds0001-nid19016. Accessed January 4, 2021.

5. Substance Abuse and Mental Health Services Administration (SAMHSA). 2019 National Survey on Drug Use and Health. Table 2.7B—Alcohol Use, Binge Alcohol Use, and Heavy Alcohol Use in Past Month among Persons Aged 12 or Older, by Detailed Age Category: Percentages, 2018 and 2019. https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs2019/NSDUHDetTabsSect2pe2019.htm#tab2-7b. Accessed January 11, 2021.

6. Population prevalence estimates (%) are weighted by the person-level analysis weight and derived from the Center for Behavioral Health Statistics and Quality National Survey on Drug Use and Health 2019 (NSDUH-2019-DS0001) Public-Use File Dataset. Binge alcohol use is defined as drinking 5 or more drinks on the same occasion for males or 4 or more drinks on the same occasion for females on at least 1 day in the past 30 days. Any alcohol is defined as a drink of an alcoholic beverage (a can or bottle of beer, a glass of wine or a wine cooler, a shot of distilled spirits, or a mixed drink with distilled spirits in it), not counting a sip or two from a drink. https://www.datafiles.samhsa.gov/study-dataset/national-survey-drug-use-and-health-2019-nsduh-2019-ds0001-nid19016. Accessed January 4, 2021.

7. Chen, C.M.; Yoon, Y-H.; Faden, V.B. *Surveillance Report #107: Trends in Underage Drinking in the United States, 1991–2015.* Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism, March 2017. https://pubs.niaaa.nih.gov/publications/surveillance107/Underage15.htm. Accessed July 30, 2019.

8. Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. *The DAWN Report: Alcohol and Drug Combinations Are More Likely to Have a Serious Outcome Than Alcohol Alone in Emergency Department Visits Involving Underage Drinking.* Rockville, MD: SAMHSA, 2014. https://www.samhsa.gov/data/sites/default/files/spot143-underage-drinking-2014/spot143-underage-drinking-2014/spot143-underage-drinking-2014.pdf. Accessed January 19, 2018.

9. Waterman, E.A.; Lee, K.D.M.; Edwards, K.M. Longitudinal associations of binge drinking with interpersonal violence among adolescents. *Journal of Youth and Adolescence* 2019 [epub ahead of print]. https://link.springer.com/article/10.1007%2Fs10964-019-01035-w. Accessed May 16, 2019. PMID: 31079263

10. The comparison of risk for an alcohol use disorder between different ages at drinking onset is based on the prevalence ratio; the comparison of the increased risk between genders is based on the ratio of the prevalence ratios. The estimates are weighted by the person-level analysis weight and derived from the Center for Behavioral Health Statistics and Quality National Survey on Drug Use and Health 2019 (NSDUH-2019-DS0001) Public-Use File Dataset. Age at drinking onset: age when first drank an alcoholic beverage (a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it), not counting a sip or two from a drink. Alcohol use disorder: alcohol dependence or abuse based on the criteria in the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV). https://www.datafiles.samhsa.gov/study-dataset/national-survey-drug-use-and-health-2019-nsduh-2019-ds0001-nid19016. Accessed January 4, 2021.

11. Squeglia, L.M.; Tapert, S.F.; Sullivan, E.V.; et al. Brain development in heavy-drinking adolescents. *American Journal of Psychiatry* 172(6):531–542, 2015. PMID: 25982660

12. Pfefferbaum, A.; Kwon, D.; Brumback, T.; et al. Altered brain developmental trajectories in adolescents after initiating drinking. *American Journal of Psychiatry* 175(4):370–380, 2018. PMID: 29084454

13. SAMHSA. 2019 National Survey on Drug Use and Health. Table 6.16B—Source Where Alcohol Was Obtained for Most Recent Use in Past Month among Past Month Alcohol Users Aged 12 to 20, by Age Group and Gender: Percentages, 2018 and 2019. https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs2019/NSDUHDetTabsSect6pe2019.htm#tab6-16b. Accessed September 16, 2020.

14. van der Vorst, H.; Engels, R.C.; Meeus, W.; et al. The impact of alcohol-specific rules, parental norms about early drinking, and parental alcohol use on adolescents' drinking behavior. *Journal of Child Psychology and Psychiatry* 47(12):1299–1306, 2006. PMID: 17176385

15. Rusby, J.C.; Light, J.M.; Crowley, R.; et al. Influence of parent-youth relationship, parental monitoring, and parent substance use on adolescent substance use onset. *Journal of Family Psychology* 32(3):310–320, 2018. PMID: 29300096

16. Substance Abuse and Mental Health Services Administration. How to tell if your child is drinking alcohol. https://www.samhsa.gov/underage-drinking/parent-resources/how-tell-if-your-child-drinking-alcohol. Accessed May 30, 2018.

17. National Institute on Alcohol Abuse and Alcoholism (NIAAA). NIAAA council approves definition of binge drinking. *NIAAA Newsletter 3:3*, Winter 2004. https://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf. Accessed March 5, 2018.

18. Chung, T.; Creswell, K.G.; Bachrach, R.; et al. Adolescent binge drinking: Developmental context and opportunities for prevention. *Alcohol Research: Current Reviews 39*(1):5–15, 2018. PMID: 30557142

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